Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

EXPERIMENT TO SHOW THAT THE ABSENCE OF LIGHT ALONE WILL PREVENT THE PROCESS OF PHOTOSYNTHESIS

By Cyrus A. King

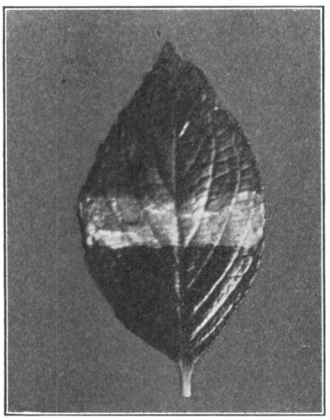
In the *Botanical Gazette* of November, 1903, Bernice L. Haug discusses the question as to whether or not Detmer's experiment to show that light is essential for photosynthesis is reliable, and concludes that it is not.

By means of melted paraffine, she shows that the leaves of *Primula obconica*, even though the plant be in good sunlight, cannot produce starch when the stomata, which are found only on the under surface, are closed. This experiment shows also, as she has pointed out, that CO_2 is not readily diffused through the intercellular spaces of the leaf.

To determine the effect of the cork disks of Detmer's experiments, she cut a circular opening in the upper disk and then fastened the cork ring through the leaf to the disk below. This allowed the light to reach the leaf from above and, at the same time, held the disk below precisely as if the upper disk had been entire. No starch was formed under the cork ring, as one would expect; neither was starch formed in the central portion which was exposed to light. The absence of starch in the latter position must have been due to the fact that CO_2 was cut off by the close-fitting disk on the under surface.

In performing some physiological experiments two of the writer's students, Messrs. R. C. Paris and J. H. Tilley, tried this experiment, using narrow strips of black cloth about as coarse-meshed as cheese-cloth. Through the kindness of Mr. Olsen, Superintendent of the Central Park green houses, the experiments were tried there on several genera. The most pronounced results were obtained from the experiments on hydrangea and rose. The leaf in the accompanying photograph was removed from a hydrangea plant after it had been exposed to the sunlight during the entire day. The black cloth strips used were cut more than twice as long as the width of the leaves and one was wrapped around each leaf near the middle. One pin was used

to fasten the ends of the strips and another was inserted into the leaf to hold the cloth close to the leaf. The photograph, which was taken by Mr. Tilley shows that no starch was formed under the black strips.



PREVENTION OF PHOTOSYNTHESIS IN HYDRANGEA.

It seems perfectly obvious that this experiment is free from the inaccuracy of Detmer's experiment which was pointed out by Miss Haug. The cloth, in many places, was not in contact with the leaves. Even assuming that diffusion did not take place through the meshes of the cloth, there were certain parts under the strips which must have been in conditions essentially similar to those outside the strips, excepting, of course, the factor of light. Since light is the only factor eliminated by the cloth strips, the experiment proves that the absence of light alone will prevent photosynthesis.

DEWITT CLINTON HIGH SCHOOL,
NEW YORK CITY.

BIRDS AND MISTLETOE: A CORRECTION

BY S. B. PARISH

In this journal for July, 1902 (**2**: 105), the writer ventured to question whether the berries of the common mistletoe of his region, *Phoradendron flavescens*, were eaten by birds, and the seeds disseminated by their evacuations. This doubt was suggested by observing the undigested appearance of the seeds so abundantly adhering to twigs and other objects, at the season of ripening. Recently I happened on a note by the late Thomas Meehan, published in the *Botanical Gazette*, for February, 1882 (**7**: 22), in which he expresses the same doubt, but founds it on a different premise. Mr. Meehan says: